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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/729,362

Applicant(s)

CHEN ET AL.

Examiner

Saif A. Alhija

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 10 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. Claims 1-6, 8-26, and 28-30 have been presented for examination.

Claims 7 and 27 have been cancelled.

**Response to Arguments**

2. Applicant's arguments filed 10 May 2007 have been fully considered but they are not persuasive.

i) Applicants amendment to the specification is acknowledged and the objection to the specification is withdrawn. Applicants amendments results in the withdrawal of the 101 rejections of the claims.

ii) Applicant argues that the reference does not disclose "a data collection module." In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., limitations imparted from the specification, for example paragraph 60 which Applicants have cited) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). The reference teaches data collection in at least the Abstract, caching of results.

iii) Applicant argues that the reference does not disclose optimization of "an actual computer system." The reference teaches the optimization of a computer system which anticipates the claimed limitations, see title of Stewart. Further, in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "an actual computer system") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

iv) Applicant argues that the reference does not disclose using the output of a first model as an input of a second model. The reference discloses in at least paragraph 21 a topology hierarchy which is defined as the models that make up the computer system. With respect to that data's path from one model to another this can be seen in at least paragraphs 19-21 in that the computer system is being modeled and the input between, for example, a client and a server. The results of the client request and the server response are interconnected and modeled for optimization. Even more simply the interaction between a users input and the modeled CPU represents using the

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output of a first model, the input mechanism, as input of a second model, a CPU, Hard driver, etc. This anticipates the limitations as claimed.

v) Following the Examiners response to the arguments presented with respect to the Stewart reference above, Applicants arguments regarding the 103 rejections are rendered moot. With respect to Applicants arguments regarding the analogous nature of the art the Examiner asserts that the reference is analogous art to that of the claimed invention. In response to applicant's argument that is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, the reference teaches optimization with respect to workloads of a computer system and Applicants preamble states "model and analyze a plurality of computing workloads." Therefore the references are in fact analogous art.

vi) Examiner has cited particular columns and line numbers in the references applied to the claims for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in their entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

vii) The Examiner respectfully requests, in the event the Applicants choose to amend or add new claims, that such claims and their limitations be directly mapped to the specification, which provides support for the subject matter. This will assist in expediting compact prosecution.

viii) Further, the Examiner respectfully encourages Applicants to direct the specificity of their response with regards to this office action to the broadest reasonable interpretation of the claims as presented. This will avoid issues that would delay prosecution such as limitations not explicitly presented in the claims, intended use statements that carry no patentable weight, mere allegations of patentability, and novelty that is not clearly expressed.

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**PRIORITY**

3. Acknowledgment is made of applicant's claim for priority to provisional application 60/510833 filed on 14 October 2003.

**Claim Rejections - 35 USC § 102**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-6, 8-11, 16-18, 20, and 24-26 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Stewart et al. "Modular Architecture for Optimizing a Configuration of a Computer System", U.S. Patent Application No. 2003/0208284, hereafter referred to as Stewart.

**Regarding Claim 1:**

The reference discloses A computer program product embodied on a computer-readable medium and comprising code that, when executed, causes a computer to model and analyze a plurality of computing workloads, the code comprising:

a data collection module configured to gather performance data associated with the operation of a computer system; (**Abstract**)

a modeling module configured to execute a plurality of models that use the gathered performance data wherein the modeling module is further configured such that output data from a first model serves as input data for a second model in a hierarchy of models; (**Paragraph 19-21**)

a data analysis module configured to present analysis data compiled from the modeling module; (**Paragraph 19-21**)

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and a framework configured to manage the data collection module, the modeling module, and the data analysis module in response to a predefined data and model flow. **(Abstract, Figure 3, and its corresponding description)**

**Regarding Claim 2:**

**The reference discloses** The computer program product of claim 1, wherein the framework is configured to selectively operate a predefined data collection module or a user-defined data collection module in response to the predefined data and model flow. **(Paragraph 24. Batch vs Console, for example.)**

**Regarding Claim 3:**

**The reference discloses** The computer program product of claim 1, wherein the framework is configured to selectively operate a predefined model or a user-defined model in response to the predefined data and model flow. **(Paragraph 24)**

**Regarding Claim 4:**

**The reference discloses** The computer program product of claim 1, wherein the framework is configured to selectively operate a predefined data analysis module or a user-defined data analysis module in response to the predefined data and model flow. **(Paragraph 24)**

**Regarding Claim 5:**

**The reference discloses** The computer program product of claim 1, wherein the framework is integrated within a predefined user interface. **(Paragraph 24)**

**Regarding Claim 6:**

**The reference discloses** The computer program product of claim 1, wherein the framework is integrated within a third party application. **(Paragraph 116)**

**Regarding Claim 8:**

**The reference discloses** The computer program product of claim 1, wherein the modeling module is further configured to execute a plurality of models in parallel. **(Page 3, Problem Spec Sample)**

**Regarding Claim 9:**

**The reference discloses** The computer program product of claim 1, wherein the framework is configured to implement the predefined data and model flow at least in part by defining a workload software object from a persistent data structure, the workload software object comprising parameters for the data collection module, modeling module, and data analysis module. **(Page 3, Problem Spec Sample. Paragraph 114)**

**Regarding Claim 10:**

**The reference discloses** The computer program product of claim 1, further comprising an editor configured to allow a user to define and store the predefined data and model flow. **(Paragraph 25)**

**Regarding Claim 11:**

**The reference discloses** The computer program product of claim 1, wherein the at least one model is selected from the group of models consisting of a workload prediction model, a performance analysis model, an optimization model, and a user-defined model. **(Page 3, Problem Spec Sample. Figure 3, and its corresponding description. Abstract)**

**Regarding Claim 16:**

**The reference discloses** A system for modeling and analyzing computing operations for a computer system, comprising:

a computer system for which computer workloads are to be monitored and analyzed; **(Abstract)**

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a computer program product embodied on a computer readable medium and comprising code that when executed causes a computer to implement a data collection module in communication with the computer system and configured to gather performance data associated with the operation of the computer system; **(Paragraph 19-21)**

a computer program product embodied on a computer readable medium and comprising code that when executed causes a computer to implement a run-time manager configured to periodically poll the data collection module and in response to the data collection module providing the gathered performance data, execute two or more models in a workload module associated with the gathered performance data; **(Paragraph 19-21)**

a computer program product embodied on a computer readable medium and comprising code that when executed causes a computer to implement a data analysis module configured to present analysis data compiled from the workload module in response to an event. **(Page 3, Problem Spec Sample. Figure 3, element 308, and its corresponding description. Paragraph 69-70. Abstract.)**

**Regarding Claim 17:**

**The reference discloses** The system of claim 16, further comprising a user interface configured to execute one or more workload modules within the run-time manager in response to a user request, each workload modules defining a data and model flow specifically designed for the computer system, the data and model flow defined within a persistent data structure. **(Abstract. Figure 3, and its corresponding description)**

**Regarding Claim 18:**

**The reference discloses** The system of claim 16, wherein the event comprises analysis data that fails to satisfy a threshold value. **(Paragraph 21)**

**Regarding Claim 20:**

**The reference discloses** The system of claim 16, further comprising an event handler that executes a predefined action in response to the event. **(Paragraph 29)**

**Regarding Claim 24:**



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**The reference discloses** A computer program product embodied on a computer readable medium and comprising code for modeling and analyzing a plurality of computing workloads that when executed causes a computer to perform the following: gathering performance data associated with the operation of a computer system; executing a plurality of models that use the gathered performance data wherein the modeling module is further configured such that output data from a first model serves as input data for a second model in a hierarchy of models; presenting analysis data compiled from the at least one model; and providing a framework configured to manage the gathering of performance data, the execution of the at least one model, and the presentation of the analysis data in response to a predefined data and model flow. **(Claim Interpretation. The phrase “that uses” appears to be intended uses and therefore the limitations following the phrase are not afforded patentable weight.) (Page 3, Problem Spec Sample. Figure 3, and its corresponding description. Paragraph 19-21. Abstract)**

**Regarding Claim 25:**

**The reference discloses** The computer program product of claim 24, wherein the framework is executed from within a third-party application. **(Paragraph 116)**

**Regarding Claim 26:**

**The reference discloses** A computer program product embodied on a computer readable medium and comprising code for modeling and analyzing a plurality of computing workloads that when executed causes a computer to perform the following: gathering performance data associated with the operation of a computer system; executing a plurality of models that use the gathered performance data wherein the modeling module is further configured such that output data from a first model serves as input data for a second model in a hierarchy of models; presenting analysis data compiled from the at least one model; and providing a framework configured to manage the gathering of performance data, the execution of the at least one model, and the presentation of the analysis data in response to a predefined data and model flow. **(Claim Interpretation. The phrase “that uses” appears to be intended uses and therefore the limitations following the phrase are not afforded patentable weight.) (Page 3, Problem Spec Sample. Figure 3, and its corresponding description. Paragraph 19-21. Abstract)**

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**Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claim(s) 12-15, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stewart.

**Regarding Claim 12:**

See rejection for claim 1.

Stewart does not explicitly disclose a plot module for designating a data analysis module configured to present analysis data compiled from the at least one model.

However, it would have been obvious to one of ordinary skill in the art to graphically plot the result data provided by Stewart in order to allow for user simplicity.

**Regarding Claim 13:**

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**Stewart discloses** The computer program product of claim 12, further comprising a storage module configured to store and retrieve the data and model flow from a persistent data structure. (**Paragraph 114. Page 3, Problem Spec Sample**)

**Regarding Claim 14:**

**Stewart discloses** The computer program product of claim 13, wherein the persistent data structure comprises an eXtensible Markup Language (XML) file. (**Page 3, Problem Spec Sample**)

**Regarding Claim 15:**

**Stewart discloses** The computer program product of claim 13, wherein the persistent data structure comprises a database. (**Paragraph 9**)

**Regarding Claim 19:**

**Stewart discloses** The system of claim 16, wherein the event comprises a user request for analysis data.

(**Page 3, Problem Spec Sample. Figure 3, and its corresponding description. Abstract**)

**Stewart does not explicitly disclose** the data analysis module presenting the analysis data to a user by way of a user-definable plotting module.

However, it would have been obvious to one of ordinary skill in the art to graphically plot the result data provided by **Stewart** in order to allow for user simplicity.

6. **Claim(s) 21-23, and 28-30** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Stewart** in view of Applicants own Admission.

**Regarding Claim 21:**

**Stewart discloses** A computer program product embodied on a computer readable medium and comprising code that when executed causes a computer to implement an application programming interface (API) for modeling and analyzing of computing workloads, comprising: a measurement software class configured to gather performance

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data associated with the operation of a computer system; a workload software class that defines a data and model flow associated with the computer system, the workload software class comprising two or more model software classes that utilize the gathered performance data to model attributes of the computer system wherein the output data from a first model serves as input data for a second model in a hierarchy of models; and a run-time manager software class configured to periodically poll for measurement objects instantiated from the measurement software class and execute one or more model objects instantiated from the one or more model software classes in response to the data and model flow defined by one or more workload objects (**Page 3, Problem Spec Sample. Figure 3, element 308, and its corresponding description. Paragraph 69-70. Abstract.**)

**Stewart does not explicitly disclose the phrase “real-time.”**

However, the stopping and starting of analysis shown in Figure 3 for example denotes real time. Further, **Applicants own Admission** in paragraph 8 of the specification of the instant application supports that real time analysis is common and would have been obvious to one of ordinary skill in the art in order to monitor a system as it runs.

**Regarding Claim 22:**

**Stewart discloses** The computer program product of claim 21, further comprising a interface module configured to start and stop execution of one or more workload objects. (**Page 3, Problem Spec Sample. Figure 3 and its corresponding description**)

**Stewart does not explicitly disclose the phrase “real-time.”**

However, the stopping and starting of analysis shown in Figure 3 for example denotes real time. Further, **Applicants own Admission** in paragraph 8 of the specification of the instant application supports that real time analysis is common and would have been obvious to one of ordinary skill in the art in order to monitor a system as it runs.

**Regarding Claim 23:**

**Stewart discloses** the analysis data associated with a specific workload object identified by a user. (**Page 3, Problem Spec Sample. Figure 3 and its corresponding description**)

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**Stewart does not explicitly disclose** The computer program product of claim 21, wherein the interface is further configured to present analysis data compiled by a plot object instantiated from a plot class.

However, it would have been obvious to one of ordinary skill in the art to graphically plot the result data provided by **Stewart** in order to allow for user simplicity. This can also be seen by **Applicants own Admission** of monitoring analysis disclosed in the Background of the instant application.

**Regarding Claim 28:**

**Stewart discloses** A computer program product embodied on a computer readable medium and comprising code for modeling and analyzing a plurality of computing workloads that when executed causes a computer to perform the following

specify a data and model flow for monitoring a computer system; invoke a modeling and analysis utility, wherein the data and model flow defines performance data that is collected and models that are executed periodically using the performance data to compile analysis data representative of results from one or more of the models wherein output data from a first model serves as input data for a second model in a hierarchy of models; and receive a representation of the analysis data from the modeling and analysis utility, in response to an event. **(Page 3, Problem Spec Sample. Figure 3 and its corresponding description)**

**Stewart** does not explicitly disclose a “real-time graphical representation of the analysis data.”

However, the stopping and starting of analysis shown in Figure 3 for example denotes real time. Further, **Applicants own Admission** in paragraph 8 of the specification of the instant application supports that real time analysis is common and would have been obvious to one of ordinary skill in the art in order to monitor a system as it runs. Further, it would have been obvious to one of ordinary skill in the art to graphically plot the result data provided by **Stewart** in order to allow for user simplicity. This can also be seen by **Applicants own Admission** of monitoring analysis disclosed in the Background of the instant application.

**Regarding Claim 29:**

**Stewart discloses** The computer program product of claim 28, wherein the event comprises analysis data that fails to satisfy a threshold value. **(Paragraph 21)**

**Regarding Claim 30:**

**Stewart discloses** The computer program product of claim 28, wherein the event comprises a user request.  
(Page 3, Problem Spec Sample. Figure 3 and its corresponding description)

**Stewart does not explicitly disclose** the modeling and analysis utility presenting the graphical representation of the analysis data to a user by way of a user-defined plotting module.

However, it would have been obvious to one of ordinary skill in the art to graphically plot the result data provided by **Stewart** in order to allow for user simplicity. This can also be seen by **Applicants own Admission** of monitoring analysis disclosed in the Background of the instant application.

**Conclusion**

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

8. All Claims are rejected.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saif A. Alhija whose telephone number is (571) 272-8635. The examiner can normally be reached on M-F, 11:00-7:30.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamini Shah can be reached on (571) 272-22792279. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SAA

July 21, 2007

  
KAMINI SHAH  
SUPERVISORY PATENT EXAMINER